IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:

Jun-Kwon HEO et al

Serial No. 09/749,586 Group Art Unit: 2621

Confirmation No.

Filed: December 28, 2000 Examiner: Jamie J. Vent

For: RECORDING MEDIUM HAVING RECORDED THEREON A DATA STRUCTURE CAPABLE OF LINKING AND REPRODUCING AUDIO DATA AND VIDEO DATA, AND METHOD AND APPARATUS OF RECORDING/REPRODUCING USING THE DATA STRUCTURE

APPEAL BRIEF UNDER 37 C.F.R § 41.37

Mail Stop Appeal Brief-Patents
Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

Pursuant to the Appellant's earlier filed Notice of Appeal on January 23, 2007, Appellant hereby appeals to the Board of Patent Appeals and Interferences from the final rejection mailed August 23, 2006. Pursuant to 37 C.F.R. §41.37(a), this appeal brief has a filing deadline of two months from the date of filing the Notice of Appeal, on March 23, 2007. The Appellant submits this Appeal Brief along with the filing fee of $500.00 set forth in 37 C.F.R. §41.20(b)(2).

Also enclosed is a Claims Appendix in compliance with 37 C.F.R. § 41.37(c)(1)(viii). An Evidence Appendix in compliance with 37 C.F.R. § 41.37(c)(1)(ix) is enclosed and indicated as being NONE. A Related Proceedings Appendix in compliance with 37 C.F.R. § 41.37(c)(1)(x) is enclosed and indicated as being NONE.

I. Real Party in Interest

Due to the assignment executed on March 16, 2001 by the inventors Jung-kwon Heo, Seong-jin Moon and Bong-gil Park and recorded in the United States Patent and Trademark Office at Reel 011669, Frame 0249, the real party in interest is as follows:

Samsung Electronics Co., Ltd.
416, Maetan-dong, Paldal-gu,
Suwon-city, Kyungki-Do,
Republic of Korea

II. Related Appeals and Interferences

Although the real party in interest has other appeals and interferences, none of the other pending appeals and interferences is believed to directly affect or be directly affected by, or have any bearing upon the decision of the Board of Patent Appeals and Interferences in this appeal.

III. Status of Claims

The status of the claims of the application is as follows:

Claims 1-40: rejected.

IV. Status of Amendments

Claims 1-40 were finally rejected in the Office Action mailed on August 23, 2006. The Appellant responded to this rejection in an Amendment filed on November 21, 2006, in which the Appellant argued for the patentability of claims 1-40 without amending the claims. In an Advisory Action mailed December 19, 2006, the Examiner indicated that the Appellant's previous Amendment would be entered, and maintained the rejection of claims 1-40. There have been no amendments to claims 1-40 since the Examiner's final rejection mailed on August 23, 2006. Accordingly, there are currently no outstanding issues regarding the status of amendments.

A copy of the claims involved in the appeal is included in the Claims Appendix.

V. Summary of the claimed subject matter

An aspect of the present invention is directed towards a recording medium on which is recorded a data structure capable of linking audio data and video data. In particular, claim 1 recites a recording medium on which is recorded a data structure (page 9, lines 5-9) comprising: first data and second data which are different from each other in type and formed of a respective plurality of data units, a first data unit descriptor table and a second data unit descriptor table in which information on the first data units and the second data units is respectively recorded as data unit descriptors, and a first program descriptor table and a second program descriptor table in which information on one or more data units forming respective programs is stored in a program descriptor of a corresponding program in the form of information on respective data unit descriptors, wherein the first and second program descriptor tables are recorded independently of the first and second data unit descriptor tables and the first and second data units, and the information on the first data units, which are to be reproduced after the first data units are linked to the second data units, in included in the program descriptor of the second program descriptor table.

FIG. 5 shows an embodiment of the recording medium according to an aspect of the present invention, which includes first data 31 and second data 41, first data unit descriptor table 32 and second data unit descriptor table 42, and first program unit descriptor table 33 and second program descriptor table 43. Video programs are made from one or more video data units. For each video data unit, a video data unit descriptor is recorded in the video data unit descriptor table 32 (page 9, lines 22-23). For each video program, a video program descriptor records information about each of the video data units used in the video program in the video program descriptor table 33 (page 9, lines 23-25). For example, in FIG. 5, for a video program

which includes video data unit 2, a video program 2 descriptor is recorded in the video program descriptor table 33. This video program 2 descriptor has information about the related video data unit 2, as indicated by the arrow pointing from the video program descriptor 2 to the video data unit 2.

Audio programs are made from one or more audio data units (page 9, line 28-page 10, line 3). For each audio data unit, an audio data unit descriptor is recorded in the audio data unit descriptor table 42 (page 9, lines 27-28). For each audio program, an audio program descriptor records information about each of the audio data units used in the audio program in the audio/video program descriptor table 43 (page 9, lines 23-25). As shown in FIG. 5, audio data and video data are linked together to provide a data structure which allows a user to link data together. An audio-video (AV) descriptor records information about each of the audio data units used in corresponding audio programs, and also records information about each of the video data units linked to the audio-visual program (page 10, lines 7-10). For example, in FIG. 5, for an audio-video program m (not shown) which is a slideshow presentation and includes video data unit 1, video data 2, video data i, audio data 2, and audio data j, an audio-video program m descriptor is recorded in the video program descriptor table 33 and has information about each of these five data units, as indicated by the five arrows.

Thus, an aspect of the present invention enables the generation of a new application linking two independent data structures, using the independent data structures for respective independent applications (page 18, lines 17-19). By doing so, two different types of data that cannot be multiplexed to each other can be related to each other so that recording, editing and reproduction are enabled (page 18, lines 19-21). Also, an aspect of the present invention enables the reproduction of a song recorded in the form of audio data together with still picture data or video data recorded separately from the audio data (page 18, lines 21-23).

VI. Grounds of rejection

The following is a concise statement of each ground of appeal.

1. Whether claims 1-40 are unpatentable under 35 U.S.C. §103 over Lee et al. (U.S. Patent No. 5,570,340) in view of Ohno (U.S. Patent No. 5,512,938).

VII. Argument

1. Claims 1-4, 6-9, 11-15, 17-21, 23-26, 30-34, 36, and 38-40 are patentably distinct over Lee et al. (U.S. Patent No. 5,570,340) (hereinafter, "Lee") and Ohno (U.S. Patent No. 5,512,938) (hereinafter, "Ohno").

As a general matter, in order to establish a *prima facie* obviousness rejection, the Examiner needs to provide both the existence of individual elements corresponding to the recited limitations, and a motivation to combine the individual elements in order to create the recited invention. Should the Examiner fail to provide evidence that either one of the individual elements or the motivation does not exist in the prior art, then the Examiner has not provided sufficient evidence to maintain a *prima facie* obviousness rejection of the claim. In re Kotzab, 217 F.3d 1365, 55 USPQ2d 1313 (Fed. Cir. 2000). Thus, the burden is initially on the Examiner to provide particular evidence as to why one of ordinary skill in the art would have been motivated to combine the individual elements to create the recited invention, and to demonstrate that this evidence existed in the prior art. In re Zurko, 258 F.3d 1379, 59 USPQ2d 1693 (Fed. Cir. 2001).

A. The combination of Lee and Ohno does not teach all of the express limitations of independent claim 1.

Independent claim 1 relates to a recording medium on which is recorded a data structure capable of linking audio data and video data. Claim 1 recites "...first data and second data which are different from each other in type and formed of a respective plurality of data units, a first data unit descriptor table and a second data unit descriptor table in which information on the

first data units and the second data units is respectively recorded as data unit descriptors, and a first program descriptor table and a second program descriptor table in which information on one or more data units forming respective programs is stored in a program descriptor of a corresponding program in the form of information on respective data unit descriptors..."

It is respectfully submitted that Lee does not teach a first data unit descriptor table, a second data unit descriptor table, a first program descriptor table, and a second program descriptor table. In the Office Action mailed August 23, 2006, the examiner argued that col. 2, lines 32-44 of Lee "describes the linking of data units that are included in the second program descriptor table." Col. 2, lines 32-44 of Lee only describes one program descriptor table, an "order table of the first programs related to the second data" which is located in a second data area. This order table is a single table 24c, not the pair of program descriptor tables recited in claim 1. After the applicants argued that Lee fails to disclose two separate program descriptor tables in an Amendment filed November 21, 2006, the Examiner responded as follows in an Advisory Action mailed December 19, 2006:

> "On page 15 applicant argues that Lee et al. fails to disclose the first and second data and first and second data unit descriptor table. Figure 3 shows both the first descriptor table (14) and second descriptor table (16) and as recited in Column 6 Lines 44-52. Additionally, Figure 3 shows the first data unit (18) and second data unit (20) as recited in Column 6 Lines 40-50."

The Examiner appears to have mischaracterized the argument made by the applicants on page 15. The applicants never argued that Lee et al. fails to disclose both the "first and second data and first and second data unit descriptor table." Rather, the applicants argued that Lee et al. fails to disclose the first and second program descriptor tables.

The Examiner seems to take the position that the first data unit (18) and the second data unit (20) disclosed by Lee anticipate the first program descriptor table and the second program descriptor table recited by claim 1. The first and second data areas 18 and 20 in Lee, however,

do not anticipate the first and second program descriptor tables recited in claim 1. Lee does not mention any tables in the first data unit 18. Instead, the first data unit 18 of Lee is described as having still image data recorded therein. Col. 7, lines 16-18. FIG. 7 of Lee shows the image data of 360 pixels x 240 lines which are compressed as 2-byte pixel data consisting of a start bit (1 bit) and RGB555 code (15 bits) and 2-byte run length data consisting of a continuation bit (1bit) and run-length code (15 bits). Col. 7, lines 17-22.

The still image data disclosed by Lee is clearly not the same as a program descriptor table. Still image data is data which stores the content of still images. In contrast, a program descriptor table is a table which stores descriptors identifying programs. The first data unit 18 of Lee therefore does not disclose a program descriptor table. Thus, Lee does not disclose a first and a second program descriptor table, as recited in claim 1 of the instant invention.

Additionally, the Examiner has not shown where Ohno discloses first and second program descriptor tables which are recorded independently of the first and second data unit descriptor tables and the first and second data units, as recited by claim 1. In the Office Action mailed August 23, 2006, the Examiner argues that "Ohno discloses a system wherein the recorded first and second descriptor tables are shown being recorded independently as seen in video and audio and further recited in Column 9 Lines 10+." However, Ohno does not teach or suggest recording first and second program descriptor tables recorded independently of the first and second data unit descriptor tables and the first and second data units.

FIG. 4 of Ohno shows a transmission video descriptor 400 having a series of N video buffer descriptors pointing to a corresponding series of N units of video code 405 which are stored in a transmission video buffer 404. Col. 9, lines 19-29. In the description of FIG. 4, Ohno states: "the transmission video descriptor 400 is a storage area provided in the memory 112 and stores N video buffer descriptors 401...the video buffer pointer 402 shows the address in the transmission video buffer 404 where the video code 405 corresponding to each video buffer

descriptor 401 is stored." Col. 9, lines 19-29. Ohno then describes a similar data structure for a transmission audio descriptor 430.

Nowhere in the above-referenced passage does Ohno teach or suggest that the video code 405 is recorded independently from the transmission video descriptor 400. Instead, Ohno discloses storing video code 405 corresponding to each video buffer descriptor 401. The type of recording disclosed by Ohno, which is recording data corresponding to descriptors, cannot reasonably be said to anticipate the limitation of claim 1, because data which is recorded "corresponding to" descriptors is recorded depending on, not recorded independently from, descriptors. Ohno therefore discloses data which is recorded "corresponding to," or depending on, descriptors, or at the very least, does not disclose data which is recorded independently from descriptors.

Thus, it is respectfully submitted that the Examiner has not shown where Lee et al. discloses a first and a second program descriptor table, or where Ohno discloses a first and second program descriptor table recorded independently of first and second data units. Should the Examiner fail to provide evidence that either one of the individual elements or the motivation does not exist in the prior art, then the Examiner has not provided sufficient evidence to maintain a *prima facie* obviousness rejection of the claim. In re Kotzab, 217 F.3d 1365, 55 USPQ2d 1313 (Fed. Cir. 2000). Therefore, the rejection of claim 1 should be withdrawn for at least this reason.

B. There is insufficient evidence of record of a motivation to combine in a manner meeting the invention as recited in claim 1.

Even if Lee and Ohno disclose each of the elements claimed in claim 1, it is respectfully submitted that the Examiner has not shown a sufficient motivation to combine Lee and Ohno to arrive at the invention as recited in claim 1. There are three possible sources for a motivation to combine references: the nature of the problem to be solved, the teaching of the prior art, and the knowledge of persons of ordinary skill in the art. In re Rouffet, 149 F.3d 1350, 1357, 47

USPQ2d 1453, 1457-58 (Fed. Cir. 1998). The initial burden is on the Examiner to provide some suggestion of the desirability of doing what the inventor has done. MPEP 2142.

i. Ohno teaches away from the claimed invention

It is respectfully submitted that Ohno teaches away from the claimed invention. A prior art reference that "teaches away" from the claimed invention is a significant factor to be considered in determining obviousness, because the prior art as a whole must "suggest the desirability" of the combination. MPEP 2145 (X)(D)(1); In re Beattie, 974 F.2d 1309, 1311, 24 USPQ2d 1040 (Fed. Cir. 1992).

By way of review, Ohno discloses a "teleconference terminal connected to other such terminals located at remote points by a network, which can inter-communicatively execute teleconferencing by transmitting audio and video information in a multiplex format using line switching on an ISDN line (emphasis added)." Col. 1, lines 5-12. Ohno discloses five different embodiments, and each embodiment discloses multiplexor/separator software 212 to process multiplexed data. Col. 6, lines 60-61 (embodiment 1); Col. 18, lines 55-56 (embodiment 2); Col. 19, lines 66-67 (embodiment 3); Col. 21, lines 37-38 (embodiment 4); Col. 22, lines 57-50 (embodiment 5). Claim 1 of Ohno recites "a multiframe conversion means for generating transmission AV multiframes by performing multiplex conversion of the transmission audio code and the transmission video code..." Col. 24, lines 35-38. FIG. 2 of Ohno discloses the multiplexer/separator software 212 used to perform multiplex conversion. By disclosing only multiplexed data in each of five embodiments, by illustrating multiplexer/separator software 212, and by claiming a multiframe conversion means for generating transmission AV multiframes, it can reasonably be said that Ohno teaches away from using non-multiplexed data.

In contrast, the present invention enables the generation of an application linking two different types of data that cannot be multiplexed to each other. Page 17, lines 25-29. Thus,

Ohno teaches away from the invention claimed in claim 1 because Ohno specifically teaches away from using non-multiplexed data. One skilled in the art would not have been motivated to combine Ohno with Lee to arrive at the claimed invention because Ohno teaches away from using multiplexed data, whereas the present invention is compatible with data that cannot be multiplexed.

Unlike the situation presented in In re Fulton, where the prior art reference disclosed both the claimed limitations and alternative embodiments, in this case Ohno does not disclose any alternative embodiments using non-multiplexed data. 73 USPQ2d 1141, 391 F.3d 1195 (Fed. Cir. 2004). In Fulton, the Federal Circuit affirmed the decision of the Board of Patent Appeals and Interferences (the "Board") to reject the subject application directed at a shoe sole with hexagonal projections under 35 U.S.C. §103(a) against Bowerman (U.S. Pat. No. 3,793,750) ("Bowerman") in view of Pope (U.S. Design Pat. No. 281,462) ("Pope"). The appellants argued that the Board erred in holding that the prior art references did not teach away from the subject application because "the prior art disclosed alternatives to each of the claimed elements A [the perimeter], B [the shape of the surface], and C [the orientation of the surface]." 73 USPQ2d at 1145-46. The Federal Circuit rejected this argument, ruling that "the prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution." Id. at 1146.

Unlike the Bowerman and Pope prior art references in Fulton, which taught both the claimed limitations of and alternatives to the subject application, Ohno teaches no alternatives to multiplexed data anywhere. Ohno does not disclose non-multiplexed data as an alternative embodiment because Ohno is specifically directed towards using data in a multiplexed format. Col. 1, lines 6-12. By teaching that each of the five different disclosed embodiments should include multiplexor/separator software 212, Ohno effectively "discourages" the use of data which

cannot be multiplexed. Fulton, 73 USPQ2d at 1146. For this reason, it is respectfully submitted that Ohno teaches away from the invention claimed in the instant application, and that the rejection should be withdrawn for at least this reason as well.

ii. The Examiner has not provided a sufficient teaching, suggestion, or motivation to combine Lee with Ohno.

It is respectfully submitted that the Examiner has not established a sufficient basis to combine Lee with Ohno to arrive at the claimed invention. There are three possible sources for a motivation to combine references: the nature of the problem to be solved, the teaching of the prior art, and the knowledge of persons of ordinary skill in the art. In re Rouffet, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998).

In the final rejection mailed August 23, 2006, the Examiner argued that "it would be obvious to one of ordinary skill in the art to use the recording medium, as disclosed by Lee et al, and further incorporate a system [which] allows independently recording descriptor tables, as recited by Ohno." Page 3. Then, in the Advisory Action mailed December 19, 2006, the Examiner argued: "In this case, Ohno teaches the recording of first and second descriptor tables independently...Although Ohno provides this function in a teleconference terminal it is important to note that the system as disclosed by Ohno is a PC based terminal and could be incorporated into the PC based system of Lee et al as seen in Figure 10." Page 3.

First, the assertion made by the Examiner that the PC-based terminal of Ohno "could be" incorporated into the PC based system of Lee does not qualify as a teaching, suggestion, or motivation to combine Lee and Ohno. The Federal Circuit has ruled that the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). Here, the Examiner fails to satisfy the burden of establishing

prima facie obviousness simply by asserting that the PC-based terminal of Ohno "could be" incorporated into the PC-based system of Lee.

Second, one skilled in the art would not have been motivated to incorporate the independently recorded program descriptor tables of Ohno into the recording medium of Lee because doing so would frustrate the purpose of Lee. Lee is directed at maximizing storage efficiency of a disk. Lee, Col. 12, lines 1-3. In order to maximize storage efficiency, Lee teaches a disc wherein "each program is made up of an index according to a data signal components sequence, to thereby remove redundant data." Lee, Col. 11, lines 50-52. Lee further teaches that in the first data area 18, a plurality of first programs are sequentially recorded according to index number, and in the second data area 20, a plurality of second programs are sequentially recorded according to index number. Lee, Col. 7, lines 15-32. Sequential recording of programs according to index numbers is not an "independent" type of recording, because the programs are recorded according to a sequence of predetermined index numbers. Although independent recording of programs might be desirable to accomplish certain goals, independent recording is not desirable to maximize the storage efficiency of a recording medium, which is a primary goal that Lee is directed towards accomplishing. Col. 12, lines 1-3. One skilled in the art would not have been motivated to combine the independently recorded descriptor tables into the recording medium of Lee which stores programs recorded depending on a sequence of index numbers, because independently recorded descriptor tables would not allow for efficient recording and reproducing of programs.

Third, one skilled in the art would not have been motivated to incorporate the independently recorded program descriptor tables of Ohno into the recording medium of Lee because the two inventions use different types of data. The pc-based teleconference terminal 200 disclosed by Ohno uses transmission code 455 which is created by the multiplex conversion of audio code, video code, and data (Col. 11, lines 1-4). In contrast, Lee does not teach using

multiplexed data anywhere. Instead, Lee discloses first data 24a that is, for example, MIDI data of a certain musical piece, and second data 24b that is text data or font data. Col. 7, lines 39-47. Lee is directed towards a recording medium used to efficiently record programs, not a teleconference terminal used on an ISDN line which transmits multiplexed data, and thus the data in Lee does not undergo a multiplex conversion process. One skilled in the art would not have been motivated to combine Lee with Ohno because the two references disclose using different types of data for completely different purposes.

For these reasons, it is respectfully submitted that the Examiner has not sufficient evidence of a proper motivation to combine Lee with Ohno to arrive at the invention claimed in claim 1, and the rejection of claim 1 should be withdrawn for at least this reason.

C. The Examiner improperly relied on Ohno as a 35 U.S.C. §103 reference because Ohno is not analogous art with the claimed invention.

It is respectfully submitted that Ohno is not analogous art with the invention claimed in the instant application. In order to rely on a reference as a basis for a 35 U.S.C. §103 rejection of an applicant's invention, the reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned. In Re Oetiker, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed Cir. 1992). In this case, Ohno is not in the field of the applicants' endeavor, and is not reasonably pertinent to the particular problem with which the applicants were concerned with.

i. Ohno is not in the field of applicant's endeavor

First, Ohno is not an invention falling within the field of applicants' endeavor. Aspects of the present invention relate to audio/video (A/V) data recording/reproducing, and more particularly, to a single recording medium on which is recorded a data structure which is capable of linking and reproducing audio data and video data, enabling two different types of data that cannot be multiplexed to each other to be related to each other for recording, editing and

reproducing (page 1, lines 12-16; page 18, lines 19-21). In contrast, Ohno relates to a teleconference terminal which can inter-communicatively execute teleconferencing by transmitting audio and video information in a multiplex format using line switching on an ISDN line (Col. 1, lines 5-12).

The teleconference terminal disclosed in Ohno does not fall into the same field of endeavor as the recording medium claimed in claim 1. The pc-based teleconference terminal 200 disclosed in Ohno is a relatively large terminal with a personal computer which a user sits at, and is attached to a wide variety of components, such as a display control unit 113 and a display unit 150 (Ohno FIG. 2). The recording medium claimed in claim 1, on the other hand, does not recite external components like a display control unit or display unit.

Furthermore, the fact that both the recording medium claimed in claim 1 and the pc-based teleconference terminal 200 "relate" to personal computers does not mean that Ohno and the present invention fall into the same field of endeavor. In Wang Laboratories, Inc. v. Toshiba Corp., 993 F.2d 858, 26 USPQ2d 1767 (1993), the Federal Circuit affirmed a jury holding that U.S. Patent No. 4,281,392 (the "'392 patent"), which disclosed a single in-line memory module (SIMM), did not qualify as analogous art against a subject patent which also disclosed a SIMM circuit. The Court held that the '392 patent did not fall in the same field of endeavor as the claimed subject matter "merely because" the '392 patent "relates to memories." Id. at 1773. The Court reasoned that the '392 patent involved memory circuits in which modules of varying sizes may be added or replaced, whereas the subject patents taught compact modular memories. Id.

Similarly, in this case, the Ohno reference, which discloses a teleconference terminal, does not fall into the same field of endeavor as the recording medium claimed in claim 1 merely because both "relate" to recording audio data and video data. As noted above, Ohno relates to data which is transmitted in a multiplex format using line switching on an ISDN line. Col. 1, lines

5-12. The instant application, on the other hand, enables two different types of data that cannot be multiplexed to each other to be related to each other for recording, editing and reproducing (page 1, lines 12-16; page 18, lines 19-21). In Wang, the Federal Circuit rejected the argument that the '392 patent qualified as analogous art against the subject application even though both specifically involved SIMM circuits. Here, Ohno is even more distinct from the instant application than the '392 patent in Wang compared to that subject application, because Ohno and the instant application do not share any common recording features as specific as a SIMM circuit. For this reason, it is respectfully submitted that the teleconference terminal taught by Ohno does not fall into the same field as the invention recited in claims 1-40.

ii. Ohno is not reasonably pertinent to the particular problem with which the applicants of the instant application are concerned with

Additionally, Ohno is not reasonably pertinent to the particular problem with which the applicants of the instant application are concerned. A reference is reasonably pertinent if, even though it may be in a different field from that of the inventor's endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering his problem. In re Clay, 966 F.2d 656, 659, 23 USPQ2d 1058, 1060-1061 (Fed. Cir. 1992).

Ohno is directed at fixing gaps in an audio signal, reducing the cost and size of a teleconference terminal, and expanding the teleconference terminal's storage capacity. Col. 4, lines 15-21. An inventor developing the recording medium recited in claim 1 would not logically look to a teleconference terminal which improves gaps in an audio signal and has a reduced cost and size. Ohno is focused on solving different problems in a different manner than those faced by the inventors of the recording medium claimed in claim 1. Thus, it is respectfully submitted that Ohno is not reasonably pertinent to the particular problem with which the

applicants of the instant application are concerned.

D. Claims 2-4, 6-9, 11-15, 17-21, 23-36, 30-34, 36, and 38-39 are patentable for at least the same reasons as claim 1 is patentable.

Independent claims 6, 11, 18, 23, 30, 31, 38, and 39 each recite at least one program descriptor recorded independently of first and second data units. Given that the Examiner rejected claims 2-40 under 35 U.S.C. §103(a) as obvious over Lee in view of Ohno, that the combination of Lee does not disclose a program descriptor table recorded independently of first and second data units, and that one skilled in the art would not have been motivated to combine Lee with Ohno to arrive at the invention claimed in claim 1, it is respectfully submitted that claims 2-4, 6-9, 11-15, 17-21, 23-36, 30-34, 36, and 38-39 are patentable for at least the same reason as claim 1 is patentable.

2. Claims 5, 10, 16, 22, 27, 28 and 35 are patentably distinct over Lee et al. (U.S. Patent No. 5,570,340) (hereinafter, "Lee") and Ohno (U.S. Patent No. 5,512,938) (hereinafter, "Ohno").

A. The combination of Lee and Ohno does not teach all of the express limitations of claims 5, 10, 16, 22, 27, 28 and 35.

In addition to the reasons argued above, it is respectfully submitted that claims 5, 10, 16, 22, 27, 28 and 35 are patentable because Lee and Ohno do not teach each of the limitations in these claims. By way of review, claims 5, 10, 16, 22, 27, 28 and 35 each recite the limitation that when the information on the first data unit in the second program descriptor table is not the same as the corresponding information on the first data unit in the first data unit descriptor table, the information on the first data unit in the second program descriptor table is updated so that the information is the same as the information on the first data unit in the first data unit descriptor. In the Office Action mailed on August 23, 2006, the Examiner rejected each of claims 5, 10, 16, 22, 27, 28 and 35 for substantially the same reason, arguing that "Lee, Col. 7, lines 5-50 describes

the process wherein the second program descriptor table is updated so that information is the same as the first unit descriptor." Although the Examiner rejected claims 5, 27 and 35 as anticipated by Lee, Col. 6, lines 7-50, and claims 10, 16, 22, 28 and 35 as anticipated by Lee, Col. 7, lines 5-50, it is assumed that the Examiner meant to reject all of these claims under Lee, Col. 7, lines 7-50, because Col. 6, lines 7-50 does not relate to claims 5, 10, 16, 22, 27, 28 and 35.

The Examiner has not shown where Lee et al discloses the limitations recited in claims 5, 10, 16, 22, 27, 28 and 35. Should the Examiner fail to provide evidence that either one of the individual elements or the motivation does not exist in the prior art, then the Examiner has not provided sufficient evidence to maintain a *prima facie* obviousness rejection of the claim. In re Kotzab, 217 F.3d 1365, 55 USPQ2d 1313. Here, Col. 7, lines 7-50 of Lee discloses first index data 24c of the first programs related to the second area. This first index data 24c is used to sequentially record a plurality of first programs in a first data area 18. Col. 7, lines 15-17.

Lee does not teach or suggest that when this first index data 24c does not match corresponding information on a first data unit in a first data unit descriptor, the first index data 24c is updated to be the same as the corresponding information, as recited in claims 5, 10, 16, 22, 27, 28 and 35. In fact, Lee does not teach or suggest that the first index data 24c itself is updated in any way whatsoever. Instead, Lee describes how the first index data 24c is used as follows: "For example, if first data is MIDI data of a certain musical piece, the first index data is for accessing the corresponding first programs of the first data area in order to construct a background screen which changes for every measure of the musical piece." Col. 7, lines 39-44. Lee describes the first index data as something used to access programs, not something which is itself updated. Although the programs which the first index data is used to access may be updated, claims 5, 10, 16, 22, 27, 28 and 35 recite updating information on the first data unit in the second program descriptor table when the information on the first data unit in the second

program descriptor table is not the same as the corresponding information on the first data unit in the first data unit descriptor table, and Lee does not disclose any such updating. Thus, it is respectfully submitted that the Examiner has not provided sufficient evidence to maintain a *prima facie* obviousness rejection of claims 5, 10, 16, 22, 27, 28 and 35 and that these rejections should be withdrawn for at least these reasons as well.

3. Claims 29 and 37 are patentably distinct over Lee et al. (U.S. Patent No. 5,570,340) (hereinafter, "Lee") and Ohno (U.S. Patent No. 5,512,938) (hereinafter, "Ohno").

A. The combination of Lee and Ohno does not teach all of the express limitations of claims 29 and 37.

In addition to the reasons argued above, it is respectfully submitted that claims 29 and 37 are patentable because the combination of Lee and Ohno does not teach each of the limitations in these claims. By way of review, claims 29 and 37 both recite the limitation that the "memory is embedded in the first signal processor." In the Office Action mailed on August 23, 2006, the Examiner rejected claims 29 and 37, arguing that "Lee et al discloses reproducing apparatus wherein the memory is embedded in the first signal processor (Figure 10 shows the memory 300 which is embedded in the signal processor MCPU 200)."

The Examiner has not shown any evidence that the memory 300 in Lee is embedded within the signal processor MCPU 200. Should the Examiner fail to provide evidence that either one of the individual elements or the motivation does not exist in the prior art, then the Examiner has not provided sufficient evidence to maintain a *prima facie* obviousness rejection of the claim. In re Kotzab, 217 F.3d 1365, 55 USPQ2d 1313. Here, Figure 10 of Lee et al. does not show the memory 300 embedded in the signal processor MCPU 200. On the contrary, Figure 10 appears to depict the memory 300 located outside of the MCPU 200. The memory 300 is connected to the MCPU 200 by arrows indicating a transfer of data and index table information output from

the MCPU 200 to the memory 300, as described in Lee, column 8, lines 34-38. Additionally, Lee discloses that the memory 300 is a RAM. Column 8, lines 44. RAMs are not generally designed to be embedded within hardware such as signal processors. Thus, it is respectfully submitted that the rejection of claims 29 and 37 should be withdrawn for at least this reason.

4. Claim 40 is patentably distinct over Lee et al. (U.S. Patent No. 5,570,340) (hereinafter, "Lee") and Ohno (U.S. Patent No. 5,512,938) (hereinafter, "Ohno").

A. The combination of Lee and Ohno does not teach all of the express limitations of claim 40.

In addition to the reasons argued above, it is respectfully submitted that claim 40 is patentable because the combination of Lee and Ohno does not teach each of the limitations in claim 40. Claim 40 recites a data structure for synchronizing reproduction of data units of a first type with reproduction of a data unit of a second type from a recording medium, the data structure comprising: a first table which relates first data unit descriptors with the first data units, respectively; a second table which relates second data unit descriptors with the second data units, respectively; and a third table which enables synchronization of predetermined ones of the first data units with predetermined ones of the second data units by reference to corresponding ones of the first and second data unit descriptors, wherein the third table is stored independently of the first and second data unit descriptors and the first and second data units.

In the Office Action mailed on August 23, 2006, the Examiner rejected claim 40, arguing that Lee et al. discloses the invention as claimed because "Figure 3 shows the first table descriptor 14 and second table descriptor 18 as further described in Column 6, lines 44-52. Furthermore, it is disclosed in Column 2, lines 50+ a third table which provides corresponding descriptors of the first and second units." However, Col. 2, lines 50+ of Lee does not disclose a third table at all. Instead, Col. 2, lines 64-66 discloses "storing the corresponding second

program in a third memory (emphasis added)." Lee specifically describes this third memory as a RAM. Col. 8, line 44. A RAM, which is a piece of hardware, clearly does not anticipate a third table which enables synchronization of predetermined ones of the first data units with predetermined ones of the second data units by reference to corresponding ones of the first and second data unit descriptors, wherein the third table is stored independently of the first and second data unit descriptors and the first and second data units. Thus, it is respectfully submitted that the Examiner has not shown where Lee discloses each of the limitations recited by claim 40, and for this reason, the rejection of claim 40 should be withdrawn.

VIII. Conclusion

In view of the law and facts stated herein, the Appellant respectfully submits that the Examiner has failed to cite a reference or combination of references sufficient to maintain obviousness rejections of the rejected claims and has failed to rebut the arguments in the Amendment dated November 21, 2006, and in the applicants' previous responses.

For all the foregoing reasons, the Appellant respectfully submits that the cited prior art does not teach or suggest the presently claimed invention. The claims are patentable over the prior art of record and the Examiner's findings of unpatentability regarding claims 1-40 should be reversed.

The Commissioner is hereby authorized to charge any additional fees required in connection with the filing of the Appeal Brief to our Deposit Account No. 50-3333.

Respectfully submitted,

STEIN, MCEWEN & BUI LLP

Date: 3/22/07

By: _____
Hung H. Bui
Registration No. 40,415

1400 Eye Street, NW, Suite 300
Washington, D.C. 20005
Telephone: (202) 216-9505
Facsimile: (202) 216-9510

IX. Claims Appendix

1. **(previously presented)** A recording medium on which is recorded a data structure comprising:

first data and second data which are different from each other in type and formed of a respective plurality of data units;

a first data unit descriptor table and a second data unit descriptor table in which information on the first data units and the second data units is respectively recorded as data unit descriptors; and

a first program descriptor table and a second program descriptor table in which information on one or more data units forming respective programs is stored in a program descriptor of a corresponding program in the form of information on respective data unit descriptors, wherein;

the first and second program descriptor tables are recorded independently of the first and second data unit descriptor tables and the first and second data units, and

the information on the first data units, which are to be reproduced after the first data units are linked to the second data units, is included in the program descriptor of the second program descriptor table.

2. **(original)** The recording medium of claim 1, wherein the first data is video data of still pictures and the second data is audio data.

3. **(original)** The recording medium of claim 1, wherein predetermined information in the first data unit descriptor is copied, as the information on the first data unit, to the program descriptor of the second program descriptor table.

4. **(previously presented)** The recording medium of claim 3, wherein the predetermined information is information on a recording time of the first data unit.

5. **(original)** The recording medium of claim 1, wherein where the information on the first data unit in the second program descriptor table is not the same as the corresponding information on the first data unit in the first data unit descriptor, the information on the first data

unit in the second program descriptor table is updated so that the information is the same as the information on the first data unit in the first data unit descriptor.

6. **(previously presented)** A recording method comprising:

recording first data and second data, which are different from each other in type and each formed of a respective plurality of data units, on a recording medium; and

recording a first data unit descriptor table and a second data unit descriptor table on the recording medium, wherein information on the first data units and the second data units is stored as data unit descriptors in the first and second data unit descriptor tables, respectively;

recording a first program descriptor table and a second program descriptor table on the recording medium, wherein:

the first and second program descriptor tables are recorded independently of the first and second data unit descriptor tables and the first and second data units,

information on one or more data units forming respective programs is stored as a program descriptor of a corresponding program in the form of information on respective data unit descriptors, and

the information on at least one of the plurality of the first data units, which is to be reproduced after the at least one of the plurality of first data units is linked to at least one of the plurality of the second data units, is included in the program descriptor of the second program descriptor table.

7. **(original)** The recording method of claim 6, wherein the first data is video data of still pictures and the second data is audio data.

8. **(original)** The recording method of claim 6, wherein predetermined information of the at least one first data unit descriptor is copied to and recorded in the program descriptor of the second program descriptor table, as the information on the first data unit.

9. **(original)** The recording method of claim 8, wherein the predetermined information is the information on a recording time of the first data unit.

10. **(original)** The recording method of claim 6, furthering comprising:

determining whether information on the first data unit in the second program descriptor table is the same as the information on the first data unit in the first data unit descriptor; and

when the two items of information are not the same, updating the information on the first data unit in the second program descriptor table so as to become the same as the information on the first data unit in the first data unit descriptor, and recording the updated information.

11. **(previously presented)** A reproducing method of reproducing data from a recording medium on which first data and second data which are different from each other in type and formed of a plurality of data units are recorded; a first data unit descriptor table and a second data unit descriptor table, in which information on the first data units and the second data units are respectively stored as data unit descriptors, are recorded; and a first program descriptor table and a second program descriptor table in which information on one or more data units forming respective programs are stored in the program descriptor of the corresponding program in the form of information on respective data unit descriptors, wherein in the program descriptor of the second program table information for linking the first data and the second data are recorded, the reproducing method comprising:

reading the second program descriptor having the information on the program to be reproduced, and then reading the information on the first data unit descriptor and the second data unit descriptor related to the corresponding program, from the read second program descriptor, wherein the second program descriptor table is recorded independently of the first and second data unit descriptor tables and the first and second data units;

reading the corresponding data unit descriptors from the first and second data descriptor tables corresponding to the read first and second data unit descriptors; and

synchronizing and reproducing the first data unit and the second data unit indicated by the read first and second data unit descriptors.

12. **(original)** The reproducing method of claim 11, wherein the synchronizing and reproducing further comprises:

temporarily storing the first data units indicated by the first data unit descriptors corresponding to the program to be reproduced, to a memory; and

reproducing the second data units indicated by the second data unit descriptors corresponding to the program to be reproduced, and at the same time synchronizing, to the

second data, and reproducing the first data units after reading the first data units stored in the memory.

13. **(original)** The reproducing method of claim 11, wherein the first data is video data of still pictures and the second data is audio data.

14. **(original)** The reproducing method of claim 11, wherein the information on the first data unit, which is to be reproduced after the first data unit is linked to the second data unit, is stored, as linkage information, in the program descriptor of the second program descriptor table, and predetermined information in the first data unit descriptor is copied, as the information on the first data unit, to the program descriptor of the second program descriptor table.

15. **(original)** The reproducing method of claim 14, wherein the predetermined information is information on a recording time of the first data unit.

16. **(original)** The reproducing method of claim 14, further comprising:

determining whether the information on the first data unit in the second program descriptor table is the same as information on the first data unit in the first data unit descriptor; and

when the two items of information are not the same, updating the information on the first data unit in the second program descriptor table so as to become the same as the information on the first data unit in the first data unit descriptor, and recording the updated information.

17. **(original)** The reproducing method of claim 14, further comprising:

determining whether the information on the first data unit in the second program descriptor table is the same as the information, which corresponds to the information on the first data unit, on the first data unit in the first data unit descriptor; and

when the two items of information are not the same, reproducing the second data unit while withholding reproduction of the first data unit.

18. **(previously presented)** A recording apparatus for recording data of different types on a recording medium, the recording apparatus comprising:

a first signal processor which formats a first data stream input into independent units, codes the formatted first data units, and provides the coded first data units to the recording medium;

a second signal processor which formats a second data stream input into independent units, codes the formatted second data units, and provides the coded second data units to the recording medium; and

a system controller which generates a first data unit descriptor table and a second data unit descriptor table, in which information on the first data units and the second data units are respectively stored as data unit descriptors, and a first program descriptor table and a second program descriptor table, in which information on one or more data units forming respective programs are stored in a program descriptor of a corresponding program in the form of information on respective data unit descriptors, wherein:

information on the first data unit, which is to be reproduced after being linked to the second data unit, is included in the program descriptor of the second program descriptor table, and

the second program descriptor table is stored independently of the first and second data unit descriptor tables and the first and second data units.

19. **(original)** The recording apparatus of claim 18, wherein the first data is video data of at least one still picture and the second data is audio data.

20. **(original)** The recording apparatus of claim 18, wherein predetermined information of the first data unit descriptor, as information on the first data unit, is copied to the program descriptor of the second program descriptor table.

21. **(original)** The recording apparatus of claim 20, wherein the predetermined information is information on a recording time of the first data unit.

22. **(original)** The recording apparatus of claim 18, wherein the system controller determines whether information on the first data unit in the second program descriptor table is

the same as the corresponding information on the first data unit in the first data unit descriptor, and, where the information is not the same, information on the first data unit in the second program descriptor table is updated so that the information in the second program descriptor table is the same as the information on the first data unit in the first data unit descriptor.

23. **(previously presented)** An apparatus for reproducing data from a recording medium on which first data and second data, which are different from each other in type and formed of a plurality of data units, are recorded; a first data unit descriptor table and a second data unit descriptor table, which include data unit descriptors having information on respective data units, are recorded; and a first program descriptor table and a second program descriptor table in which information on one or more data units forming respective programs are stored in the program descriptor of the corresponding program in the form of information on respective data unit descriptors, are recorded, wherein information for linking the first data and the second data is recorded in the program descriptor of the second program table, the reproducing apparatus comprising:

a system controller which reads the second program descriptor having the information on the program to be reproduced, reads the information on the first data unit descriptor and the second data unit descriptor related to the corresponding program from the read second program descriptor, and reads corresponding data unit descriptors from the first data descriptor table and the second data descriptor table corresponding respectively to read information on the first data unit descriptor and the second data unit descriptor, wherein the second program descriptor table is recorded independently of the first and second data unit descriptor tables and the first and second data units;

a memory;

a first signal processor, which temporarily stores the corresponding first data unit indicated by the read first data unit descriptor to the memory, decodes the first data unit stored in the memory, and reproduces the decoded first data unit after adjusting a timing of the decoded first data unit to that of the second data unit; and

a second signal processor which decodes the corresponding second data unit indicated by the read second data unit descriptor and reproduces the decoded second data.

24. **(original)** The reproducing apparatus of claim 23, wherein the first data is video data of still pictures, and the second data is audio data.

25. **(original)** The reproducing apparatus of claim 23, wherein the information on the first data unit, which is to be reproduced after the first data unit is linked to the second data unit, is stored, as linkage information, in the program descriptor of the second descriptor table, and predetermined information in the first data unit descriptor is copied, as the information on the first data unit, to the program descriptor of the second descriptor table.

26. **(original)** The reproducing apparatus of claim 25, wherein the predetermined information is information on a recording time of the first data unit.

27. **(original)** The reproducing apparatus of claim 23, wherein the system controller determines whether the information on the first data unit in the second program descriptor table is the same as the corresponding information on the first data unit in the first data unit descriptor, and, where the items of information are not the same, the information on the first data unit in the second program descriptor table is updated so that the information is the same as the information on the first data unit in the first data unit descriptor.

28. **(original)** The reproducing apparatus of claim 23, wherein the system controller determines whether the information on the first data unit in the second program descriptor table is the same as the corresponding information on the first data unit in the first data unit descriptor, and, where the items of information are not the same, the second data unit is reproduced while the reproduction of the first data unit is withheld.

29. **(original)** The reproducing apparatus of claim 23, wherein the memory is embedded in the first signal processor.

30. **(previously presented)** An audio-reproduction-dedicated apparatus for reproducing data from a recording medium on which first data and second data which are different from each other in type and formed of a plurality of data units are recorded; a first data unit descriptor table and a second data unit descriptor table, which include data unit descriptors having information

on respective data units, are recorded; and a first program descriptor table and a second program descriptor table in which information on one or more data units forming respective programs are stored in the program descriptor of the corresponding program in the form of information on respective data unit descriptors, are recorded, wherein information for linking the first data and the second data is recorded in the program descriptor of the second program table, the audio-reproduction-dedicated apparatus comprising:

a system controller which reads the second program descriptor having the information on the program to be reproduced, reads the information on the second data unit descriptor related to the corresponding program from the read second program descriptor, and reads corresponding data unit descriptors from the second data descriptor table corresponding to read information on the second data unit descriptor, wherein the second program descriptor table is recorded independently of the first and second data unit descriptor tables and the first and second data units; and

a signal processor which decodes the corresponding data unit indicated by the read second data unit descriptor and reproduces the second data.

31. **(previously presented)** A recording/reproducing apparatus comprising:

a memory;

a first signal processor which formats first data input into independent units and codes the formatted first data units during recording; and which, during reproduction, temporarily stores a corresponding data unit indicated by a read first data unit descriptor to the memory, decodes the first data unit read from the memory, and reproduces the decoded first data unit after adjusting the timing of the decoded first data unit to that of a corresponding second data unit;

a second signal processor which formats second data input into independent units, codes the formatted second data units during recording; and, during reproduction, decodes the corresponding second data unit indicated by a read second data unit descriptor and reproduces the decoded second data unit; and

a system controller which:

during recording, generates a first data unit descriptor table and a second data unit descriptor table storing information on the first data units and the second data units as data unit descriptors, and generates a first program descriptor table and a second program descriptor table in which information on one or more data units forming respective programs is stored in the program descriptor of the corresponding program in the form of information on respective data unit descriptors, wherein:

the second program descriptor table is recorded independently of the first and second data unit descriptor tables and the first and second data units, and

the information on the first data unit to be reproduced after being linked to the second data unit is included in the program descriptor of the second program descriptor table; and,

which, during reproduction, reads the second program descriptor having information on the program to be reproduced, reads information on the first data unit descriptor and the second data unit descriptor related to the corresponding program from the read second program descriptor, and reads corresponding data unit descriptors from the first data descriptor table and the second data descriptor table corresponding respectively to read the information on the first data unit descriptor and the second data unit descriptor.

32. **(original)** The recording/reproducing apparatus of claim 31, wherein the first data is video data of still pictures and the second data is audio data.

33. **(original)** The recording/reproducing apparatus of claim 31, wherein the information on the first data unit which is to be reproduced after the first data unit is linked to the second data unit is stored, as linkage information, in the program descriptor of the second descriptor table, and predetermined information in the first data unit descriptor is copied, as information on the first data unit, to the program descriptor of the second descriptor table.

34. **(original)** The recording/reproducing apparatus of claim 31, wherein the predetermined information is information on a recording time of the first data unit.

35. **(previously presented)** The recording/reproducing apparatus of claim 31, wherein the system controller determines whether the information on the first data unit in the second

program descriptor table is the same as the corresponding information on the first data unit in the first data unit descriptor, and, where the items of information are not the same, the information on the first data unit in the second program descriptor table is updated so that the information is the same as the information on the first data unit in the first data unit descriptor.

36. **(original)** The recording/reproducing apparatus of claim 31, wherein the system controller determines whether the information on the first data unit in the second program descriptor table is the same as the corresponding information on the first data unit in the first data unit descriptor, and, where the two items of information are not the same, the second data unit is reproduced while the reproduction of the first data unit is withheld.

37. **(original)** The recording/reproducing apparatus of claim 31, wherein the memory is embedded in the first signal processor.

38. **(previously presented)** A recording method comprising:

recording first and second data types on a recording medium, each type formed of a respective plurality of data units;

recording a first data unit descriptor table and a second data unit descriptor table, each table relating at least one data unit of each of the first and second types with a respective data unit descriptor; and

recording a program descriptor table which relates at least one data unit descriptor of the first type and at least one data unit descriptor of the second type, wherein the program descriptor table is recorded independently of the first and second data unit descriptor tables and the first and second data units.

39. **(previously presented)** A recording method comprising:

recording first and second data types on a recording medium, each type formed of a respective plurality of data units;

recording a first descriptor table which relates at least one data unit of the first type with a respective first data unit descriptor; and

recording a second descriptor table which relates at least one data unit of the second type with a respective data unit descriptor and with the respective first data unit descriptor of the

at least one data unit, wherein the program descriptor table is recorded independently of the first and second data unit descriptor tables and the first and second data units.

40. **(previously presented)** A data structure for synchronizing reproduction of data units of a first type with reproduction of a data units of a second type from a recording medium, the data structure comprising:

a first table which relates first data unit descriptors with the first data units, respectively; and

a second table which relates second data unit descriptors with the second data units, respectively; and a third table which enables synchronization of predetermined ones of the first data units with predetermined ones of the second data units by reference to corresponding ones of the first and second data unit descriptors, wherein the third table is stored independently of the first and second data unit descriptors and the first and second data units.

X. **Evidence Appendix**

NONE

XI. **Related Proceedings Appendix**

NONE